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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,890	03/19/2004	Stephen J. Mihailov	102-11 US CIP	7137
24949	7590	06/29/2005	EXAMINER	
TEITELBAUM & MACLEAN 1187 BANK STREET, SUITE 201 OTTAWA, ON K1S 3X7 CANADA			KIM, ELLEN E	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

4A

Office Action Summary

Application No.

10/803,890

Applicant(s)

MIHAILOV ET AL.

Examiner

Ellen Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/24/04, 5/13/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1- 3, 5-8, 11-13, 16-21, 25-27, and 28 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Tatah et al [USPAT 6,347,171, Applicant's submitted prior art].

Tatah et al disclose a method for forming a diffraction grating in an optical fiber comprising:

Providing an optical waveguide 116 [fig. 1];

Disposing a mask 110 [diffractive optical element, see column 2, line 16]; and

Providing electromagnetic radiation having a pulse duration of less than or equal to 500 picoseconds [102, ultrashort pulse laser as shown in abstract].

According to the definition of the "Ultrashort-pulse laser" in the Photonics Directory of a Laurin web site, the Tatah et al's laser is capable of generating light pulses that last only a few femtoseconds, which is less than or equal to 500 picoseconds as claimed in claim 1.

The claimed limitations regarding intensity, such as "...the electromagnetic radiation incident on the optical waveguide being sufficiently intense to cause a change in an index of refraction of the optical waveguide, the electromagnetic radiation interacting with the surface of the mask having a sufficiently low intensity to not significantly alter produced spatial intensity modulation properties of the mask." Is considered to be inherently done by Tatah et al to maintain and properly operate the optical system.

In re claim 2, Tatah et al teach at column 2, lines 23-28 that the grating can be done in the cladding of the optical fiber.

In re claim 3, it is clear that the ultrashort pulse laser is generating a few femtoseconds which is less than 100 picoseconds. It is further noted that Tatah et al show in fig. 1 and fig. 2 that the distance between the mask and the fiber is close enough so that the group velocity walk-off results in pure 2-beam interference.

In re claims 11 and 12, Tatah et al show all the claimed structural limitations, therefore, the claimed characteristic of the invention is inherently shown by Tatah et al device.

In re claim 13, Tatah et al teach at column 5, lines 40-50 that non-UV and UV radiation can be used to form grating and the grating can be formed under the cladding. Therefore, it is clear any material for the cladding can be utilized in the device.

In re claims 17 and 18, the focusing element 106 [fig. 1] is provided between the laser source 102 and the mask 110.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 9-10, 14-15, 22-23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatah et al as applied to claim 1 above.

Tatah et al disclose every aspect of claimed invention except for the external jacket layer.

It would have been obvious to the ordinary skilled person in the art at the time the invention was made to modify Tatah et al' s device to include an external jacket layer for

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the purpose of protecting from the outside environment. It is clear that this would improve the device:

In re claim 10, it is clear that the external jacket layer is an extra cladding layer.

In re claims 14 and 15, Tatah et al disclose every aspect of claimed invention except for the fused biconic tapered coupler and the tapered optical fiber. Official Notice is taken tapered optical fiber and the fused biconic tapered coupler are old and well known in the art for the purpose of higher coupling efficiency of the device. See In Re Malcolm 1942 C.D. 589:543 O.G. 440 MPEP 706.02 (a).

Tatah et al teach at column 5, lines 40-63 that the method of making grating can be utilized in any optical element. Therefore, It would have been obvious to the ordinary skilled person in the art at the time the invention was made to modify the Tatah et al device to be utilized in the tapered optical fiber and fused biconic tapered coupler for the purpose of higher coupling efficiency of the device.

In re claims 22-24, Tatah et al disclose every aspect of claimed invention except for the SMF-28 optical fiber or sapphire optical fiber. Tatah et al teach at column 5, lines 40-63 that the method of making grating can be utilized in any optical element. Therefore, It would have been obvious to the ordinary skilled person in the art at the time the invention was made to modify the Tatah et al device to be utilized in the SMF-28 optical fiber or a sapphire optical fiber.

Conclusion

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

For all official patent application related correspondence for organizations reporting to the Commissioner of Patents:

- Correspondence that is transmitted by facsimile must be directed to the central facsimile number, (703) 872-9306.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Further references of interest are cited on Form PLO-892, which is attachment to this office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen Kim whose telephone number is (571) 272-2349. The examiner can normally be reached on Monday through Thursday.

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Ellen E. Kim

Primary Examiner

June 25, 2005/EK

A handwritten signature in black ink, appearing to be 'EK' with a stylized flourish.